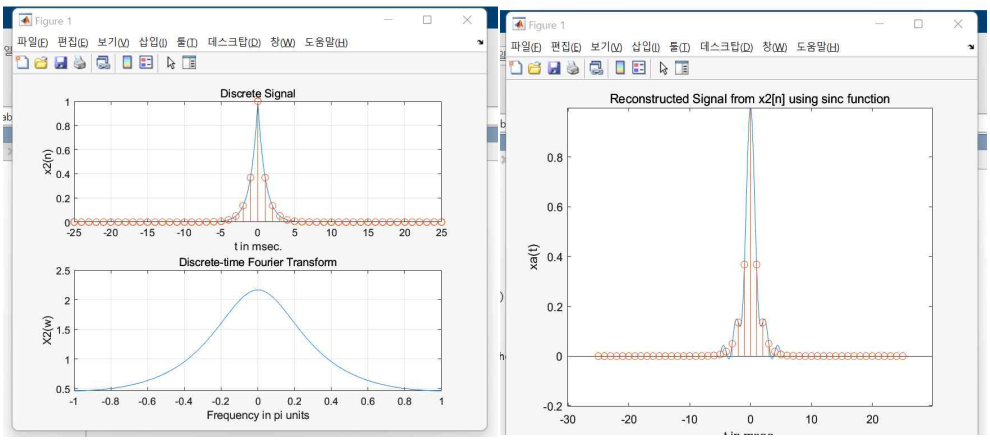
번	주차: 9주차 과:융합전자공학부 학번: 2019043890 이름: 이창민

코드	[a]
	% Analog Signal
	Dt = 0.00005;
	t = -0.005:Dt:0.005;
	xa = exp(-1000*abs(t));
	% Discrete-time Signal
	Ts = 0.001; n = -25:1:25;
	x = exp(-1000*abs(n*Ts));
	% Discrete-time Fourier transform
	K = 500; k = -K:1:K;
	w = pi*k/K;
	X = x * exp(-1i*n'*w);
	X = real(X);
	subplot(2,1,1);plot(t*1000,xa);grid;
	xlabel('t in msec.'); ylabel('x2(n)')
	title('Discrete Signal'); hold on
	stem(n*Ts*1000,x); gtext('Ts=1 msec');
	
	subplot(2,1,2);plot(w/pi,X);grid;
	xlabel('Frequency in pi units'); ylabel('X2(w)')
	title('Discrete-time Fourier Transform'); hold off
	
	[b]
	% Reconstruction using sinc function
	%
	% Discrete-time Signal x1(n)
	Fs = 1000; Ts = 1/Fs; n = -25:1:25; nTs = n*Ts;
	x = exp(-1000*abs(nTs));
	% Analog Signal reconstruction
	Dt = 0.00005;
	t = -0.005:Dt:0.005;
	xa = x * sinc(Fs*(ones(length(nTs),1)*t-nTs'*ones(1,length(t))));
	% Plots
	plot(t*1000,xa);
	xlabel('t in msec.'); ylabel('xa(t)')
	title('Reconstructed Signal from x2[n] using sinc function'); hold on
	stem(n*Ts*1000,x); hold off

결과	
설명	ex2와 비교하면, 샘플링 주파수가 낮아지니까 샘플링을 더 띄엄띄엄한다. 그래서 복원도 이상하게 바뀐 걸 볼 수 있다.